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CHARACTERISTICS OF HYPERSENSITIVITY PATIENTS IN SANGLAH GENERAL HOSPITAL DENPASAR ON 2018

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***Abstract*: Hypersensitivity reaction is the increase of body's reactivity and sensitivity to prior antigen exposure. Anaphylaxis is the most severe manifestation from acute hypersensitivity and can leads to death. This study is conducted based on the lack of hypersensitivity patients' frequency and characteristics data, especially in Indonesia even though hypersensitivity is a condition that can cause death. This study aims to provide the characteristics of hypersensitivity patients based on their gender, age, and etiology. This study is a descriptive retrospective non-analytic study. Data sources were obtained from secondary data in the form of patient's medical records with data retrieval methods using totally sampling technique. The accessible population was patients diagnosed with acute hypersensitivity and anaphylaxis reaction in Sanglah General Hospital Denpasar on 2018. From 101 hypersensitivity patients, 64 patients are female (63,4%), majority are in age range of 21-29 years old which are 26 patients (25,7%), and most cases are caused by drugs with 68 patients (67,3%).**

***Keywords*: Hypersensitivity, Characteristics, Gender, Age, Etiology.**

I. INTRODUCTION

One paediatrician stated the term allergy for the first time about 100 years ago to explain the idea of immune system function that should not be pictured as an exemption of disease but as a change of reactivity. First contact of antigen and immune system change the reactivity of an individual, and the second contact trigger multiple responses from protective to hypersensitivity.[1] One of the reactions that can possibly happen is acute hypersensitivity.

Acute hypersensitivity is an IgE antibody and mast cell mediated reaction to after the exposure of antigens. The most severe form of this reaction is called anaphylaxis that is indicated by oedema in many tissues followed by hypotension and bronchoconstriction.[2] Anaphylaxis phenomenon has been existed and explained on Chinese ancient and Greek literatures, but the term of anaphylaxis is stated for the first time by Charles Richet and Paul Portier in 1902. Anaphylaxis is derived from aphylaxis that means lack of protection, but for rhyme purpose anaphylaxis is use instead until today.[3]

Hypersensitivity reaction has a high number of cases. It can cause cardiovascular problems and even can lead to death. Even though hypersensitivity can cause fatality, but the frequency and characteristics data are still limited, especially in Indonesia. The purpose of this study is to find the characteristics of hypersensitivity patients in Sanglah General Hospital Denpasar on 2018 based on gender, age, and etiology.

II. METHODOLOGY

This study is a descriptive retrospective non-analytic study. The data is a secondary data obtained from patient's medical records using total sampling method. This study is conducted in Sanglah General Hospital Denpasar from January 2019 until March 2019. The samples for this study are all patients diagnosed with acute hypersensitivity and anaphylaxis reaction in Sanglah General Hospital Denpasar on 2018 where patients with an incomplete data on their medical record are excluded. Data of gender, age, and etiology that are obtained will be analysed with SPSS software program for windows, version 24.0.

III. RESULT AND DISCUSSION

In this study, 101 patients with acute hypersensitivity and anaphylaxis reaction are obtained with 52 patients are diagnosed with acute hypersensitivity and 49 patients are diagnosed with anaphylaxis reaction. From Fig. 1, female patients have a greater number than male patients with 63,4% or 64 out of 101 patients. On patients that is diagnosed with acute hypersensitivity 51,9% of them are female which can be seen from Fig. 2. The same result can be seen on Fig.3 where there are more female patients with 75,5% in samples that are diagnosed with anaphylaxis reaction.

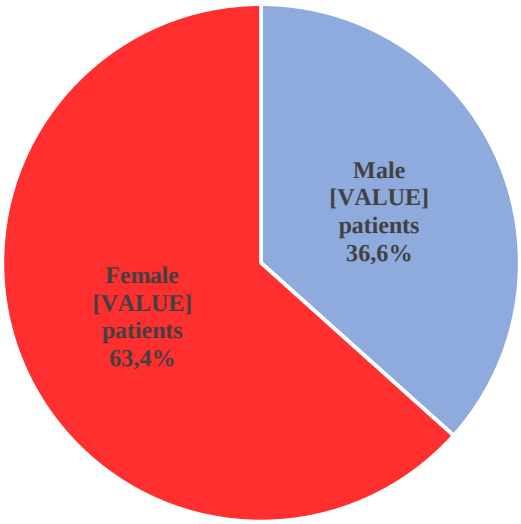

Figure 1: Overall frequency distribution of patient's gender

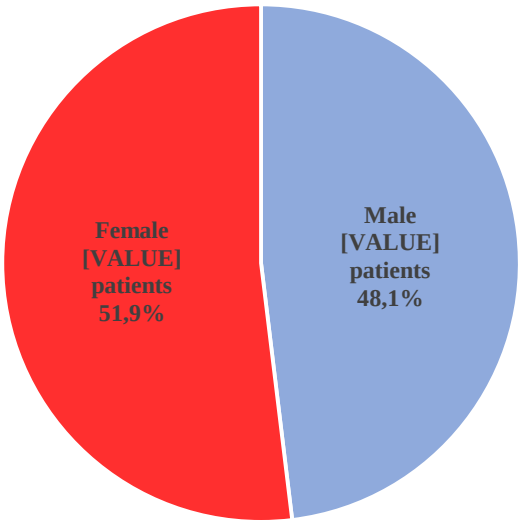

Figure 2: Gender frequency distribution of patients diagnosed with acute hypersensitivity

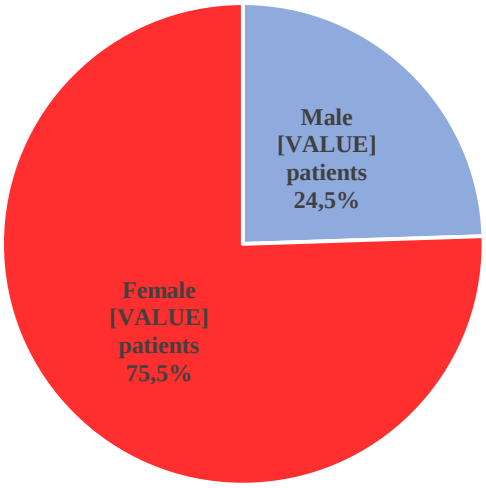

Figure 3: Gender frequency distribution of patients diagnosed with anaphylaxis reaction

This result is in line with other studies such as one by Decker, et al. that stated female are more dominant than male in hypersensitivity patients with 55,9% out of all samples.[4] A study from Sheikh and Alves also said that there are more female than male in hypersensitivity patients with 56,1%.[5] The significant effect of gender to hypersensitivity reaction physiologically is still not explained yet.[6]

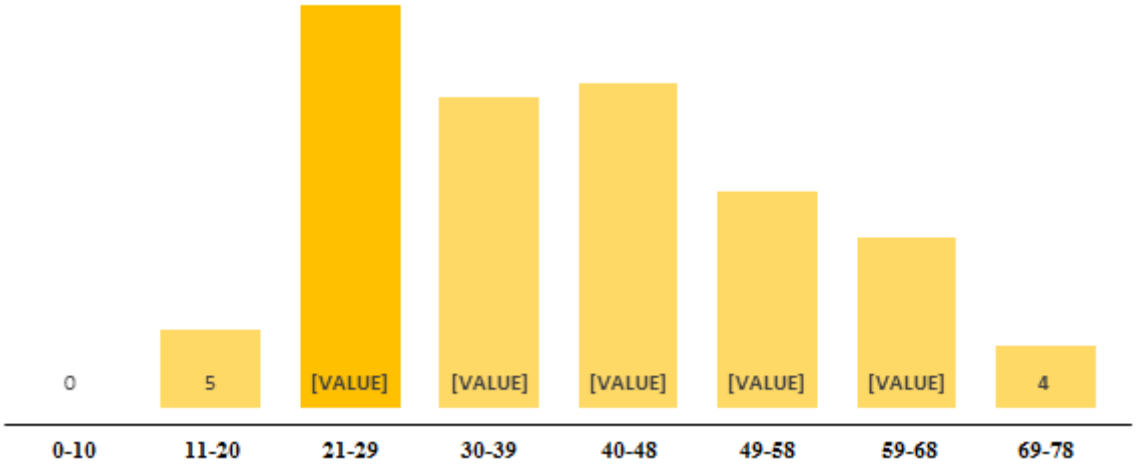

Figure 4: Overall frequency distribution of patient's age

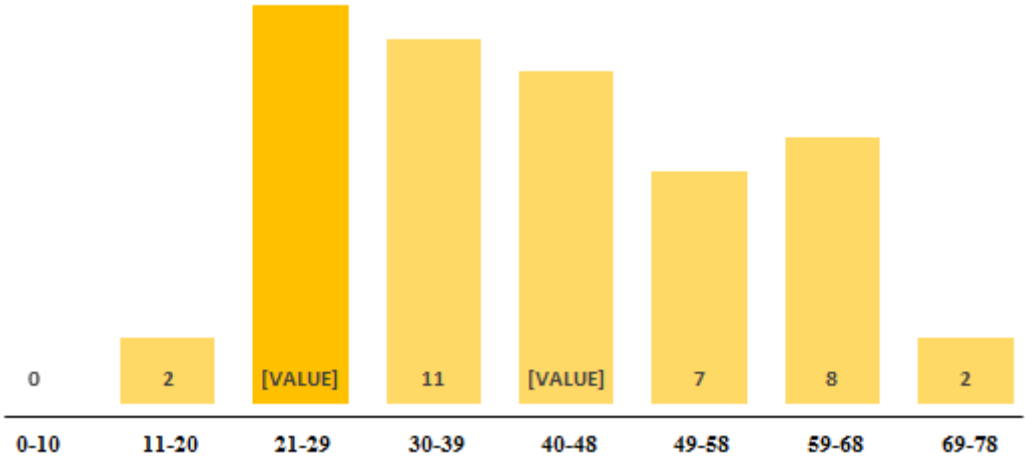

Figure 5: Age frequency distribution of patients diagnosed with acute hypersensitivity

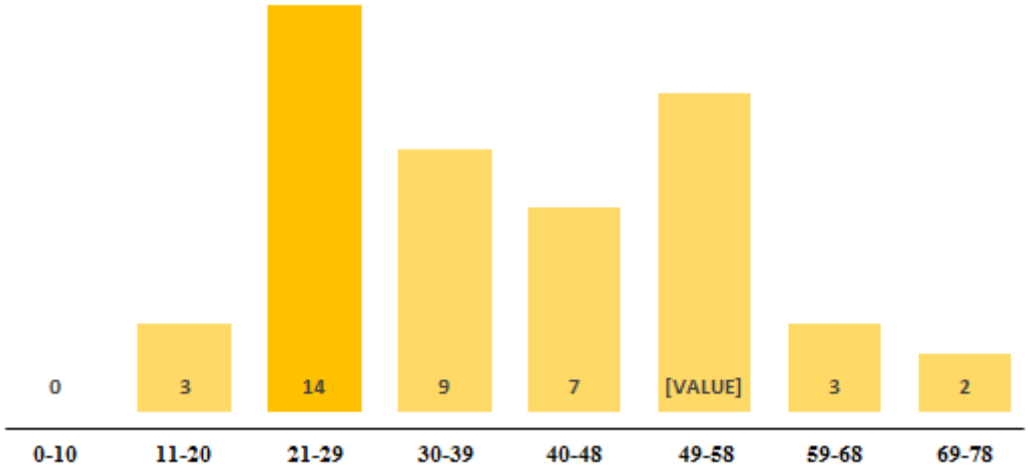

Figure 6: Age frequency distribution of patients diagnosed with anaphylaxis reaction

According to Fig. 4, the majority of hypersensitivity patients are 21-29 years old which is in number 25,9%. In Fig.5 and Fig. 6, patients that are diagnosed with acute hypersensitivity and anaphylaxis reaction mostly fall in the age group of 21-29 years old which is in number 23,1% for acute hypersensitivity patients and 28,6% for anaphylaxis reaction patients. Civelek, et al. found in their study that the mean age of hypersensitivity patients is 27,5 years old[7] and a study by Yang, et al. stated that the majority of hypersensitivity patients (27,9%) are found in 20-29 years old age group.[8] Age effect on hypersensitivity reaction in general has not been explained yet, but in a specific group there were a relation of age and hypersensitivity reaction. People with adult age were more possible to experience hypersensitivity reaction caused by drugs or if they were female. [7]

Table 1: Overall frequency distribution of patient's etiology

Etiology	Frequency (%)
Drugs	68 (67.3)
Food	12 (11.9)
Insect Bite	5 (5)
Blood Product	15 (14.9)
Dust	1 (1)

Table 2: Etiology frequency distribution of patients diagnosed with acute hypersensitivity

Etiology	Frequency (%)
Drugs	39 (75)
Food	2 (3.8)
Insect Bite	1 (1.9)
Blood Product	10 (19.2)

Table 3: Etiology frequency distribution of patients diagnosed with anaphylaxis reaction

Etiology	Frequency (%)
Drugs	29 (59.2)
Food	10 (20.4)
Insect Bite	4 (8.2)
Blood Product	5 (10.2)
Dust	1 (2)

The result on Table 1 displayed that most hypersensitivity cases in Sanglah General Hospital are caused by drugs which are 67,3% of them. Drugs also became the most common cause in patients that are diagnosed with acute hypersensitivity (75%) and anaphylaxis reaction (59,2%) as showed on Table 2 and Table 3. Studies from Imbawan, et al. and Hsin, et al. also found drugs as the most common etiology of hypersensitivity reaction. Imbawan, et al. found in their study that 63,9% of hypersensitivity reaction cases are caused by drugs.[6] Hsin, et al. reveal that drugs are the etiology of 53% of hypersensitivity reaction cases.[9] The use of drugs repeatedly can increase the risk of experiencing hypersensitivity reaction.[10]

IV. CONCLUSION

Based on the results of the study that has been done, in can be concluded as follows; From 101 samples that are obtained, 52 patients were diagnosed with acute hypersensitivity and 49 patients with anaphylaxis reaction. 64 patients (63,4%) were female and 37 patients (36,6%) were male. The patients that are diagnosed with acute hypersensitivity, 27 patients (51,9%) were female and 25 patients (48,1%) were male. 37 out of 49 patients (75,5%) diagnosed with anaphylaxis reaction were female. Majority of samples fall in the age group of 21-29 years old which are 26 patients (25,7%) overall, 12 patients (23,1%) for acute hypersensitivity case, and 14 patients (28,6%) for anaphylaxis reaction case. Drugs became the most common etiology where 68 cases (67,3%) are caused by it. It is also the most common etiology in acute hypersensitivity and anaphylaxis reaction case with 39 patients (75%) and 29 patients (59,2%) respectively.

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